Listing of Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Previously Presented) An integrated tunable sensing apparatus for electromagnetic radiation, the sensing apparatus comprising:

a substrate comprising a backside and a face, the substrate transparent to incident electromagnetic radiation of a wavelength;

a tunable cavity region coupled to the backside of the substrate and configured to receive the incident electromagnetic radiation transmitted through the substrate;

an elastic material forming a region including the tunable cavity region;

a first reflection device within a first portion of the tunable cavity region;

a second reflection device within a second portion the cavity region and facing the first reflection device;

a movable gap formed between the first reflection device and the second reflection device within the tunable cavity region;

an actuation device coupled to the tunable cavity region, the actuation device being adapted to cause movement from a first predetermined spatial dimension to a second predetermined spatial dimension of the movable gap; and

a detection device coupled to the tunable cavity.

2. (Previously Presented) The apparatus of claim 1 wherein the detection device comprises one of the reflection devices.

3. (Original) The apparatus of claim 1 wherein electromagnetic radiation is IR.

4. (Original) The apparatus of claim 1 wherein the first predetermined spatial dimension ranges from about 1.5 Microns to about 4 Microns.

5. (Original) The apparatus of claim 1 wherein the second predetermined spatial dimension ranges from about 2.5 Microns to about 8 Microns.

6. (Previously Presented) The apparatus of claim 1 wherein the detection device is a temperature sensing device.

7. (Previously Presented) The apparatus of claim 6 wherein the temperature sensing device comprises one of the first or second reflection devices.

8. (Original) The apparatus of claim 1 further comprising a drive device coupled to the actuation device.

9. (Original) The apparatus of claim 1 further comprising a control device coupled between the detection device and drive device.

10. (Original) The apparatus of claim 1 the substrate comprises a silicon wafer.

11. (Original) The apparatus of claim 1 wherein the detection device is adapted to capture information associated with a selected wavelength range within an IR range of electromagnetic radiation having the selected wavelength range, the electromagnetic radiation having the selected wavelength range having a resonating characteristic between the first reflection device and the second reflection device within the tunable cavity region.

12. (Original) The apparatus of claim 11 wherein the selected wavelength range is selected from 3-5 Microns and 8-14 Microns.

13. (Original) The apparatus of claim 12 wherein tunable cavity region is free from electromagnetic radiation outside of the selected wavelength range having a resonating characteristic.

14. (Original) The apparatus of claim 13 wherein the movable gap is maintained at the second predetermined spatial dimension to provide the resonating characteristic of the electromagnetic radiation between the first reflection device and the second reflection device.

15. (Original) The apparatus of claim 1 wherein the substrate, the elastic material, first reflection device, second reflection device, movable gap, actuation device and

detection device are enclosed in a package, the package having a window region facing the backside of the substrate, the window region being adapted to allow electromagnetic radiation to traverse there through.

16. (Original) The apparatus of claim 15 wherein the package provides a vacuum in the tunable cavity.

17. (Previously Presented) A method for sensing electromagnetic radiation having a predetermined spatial frequency, the method comprising:

providing a substrate transparent to a band of electromagnetic radiation;

providing a tunable cavity region, the tunable cavity region comprising an elastic material forming a region including the tunable cavity region, the tunable cavity region having a first reflection device within a first portion of the tunable cavity region and having a second reflection device within a second portion the cavity region and facing the first reflection device, the tunable cavity region having a movable gap formed between the first reflection device and the second reflection device within the tunable cavity region;

wherein the tunable cavity region is coupled to the transparent substrate;

receiving the band of electromagnetic radiation transmitted through the substrate;

moving the movable gap from a first predetermined spatial dimension to a second predetermined spatial dimension using an actuation device coupled to the tunable cavity region;

causing a resonating characteristic of a selective wavelength corresponding to the band of electromagnetic radiation between the first reflection device and the second reflection device within the tunable cavity while being maintained at the second predetermined spatial dimension;

preventing one or more wavelengths outside of the selected wavelength from achieving the resonating characteristic between the first reflection device and the second reflection device while being maintained at the second predetermined spatial dimension; and

capturing information associated with the selected wavelength using a detection device coupled to the tunable cavity region.

18. (Previously Presented) The method of claim 17 wherein the detection device comprises one of the reflection devices.

19. (Original) The method of claim 17 wherein electromagnetic radiation is IR radiation.

20. (Original) The method of claim 17 wherein the first predetermined spatial dimension ranges from about 2.5 Microns to about 7 Microns.

21. (Original) The method of claim 17 wherein the second predetermined spatial dimension ranges from about 1.5 Microns to about 4 Microns.

22. (Previously Presented) The method of claim 17 wherein the detection device is a temperature sensing device.

23. (Previously Presented) The method of claim 17 wherein the elastic member is a polymer.

24. (Original) The method of claim 17 where the actuation device is coupled to a drive device.

25. (Original) The method of claim 17 wherein the selected wavelength range is selected from 3-5 Microns to 8-14 Microns.

26-36 (Canceled)